Cardano 360 March 2022

[00:00:00] **Tim Harrison:** Welcome to your March edition of Cardano 360, your monthly catch-up with the people and projects building out the Cardano ecosystem. Now, before we begin, make sure you like, subscribe, and hit that bell icon for all the latest Cardano content and news from the team here at. Later in the show, we'll be checking in with Kevin, John, and Nigel for a preview of the June Vasil hard fork.

[00:00:36] We'll also meet a new member of the team, head of ecosystem growth, Morgan Scofield, to find out more about Essential Cardano, a new site, covering all things Cardano. And if you're into dogs and NFTs, you might want to stick around till the end for a bit of a special message. Well with that slightly cryptic note, let's start with something a little more tangible yield and liquidity.

[00:00:56] Now, earlier this week, Wave Financial announced a new fund, and I [00:01:00] had an opportunity to catch up with IOG's Nick Nayfack to learn more about this new program wave CEO, David Sima, and Ken Kadama from Emergo will also drop by to say a few words.

[00:01:14] So Nick welcome. Now, as I understand it, this fund is ultimately about driving liquidity and supporting growth for defy on Cardano.

[00:01:22] **Nick Nayfack:** Yes. The objective of the fund is to help jumpstart the DeFi ecosystem by providing liquidity for a lot of dApps, specifically DEXs and lenders to help bring total value locked or TVL on chain to Cardano.

[00:01:40] **Tim Harrison:** Perhaps you can explain what we mean by liquidity and why projects need it?

[00:01:44] **Nick Nayfack:** In early stages in DeFi ecosystems, it's important to enable a good user experience for things like swaps. So when there's adequate liquidity in a DEX or within a decentralized exchange, you need that to [00:02:00] facilitate trading activity and to have trade executions happen in a timely manner for users.

[00:02:06] Liquidity is a pretty fundamental concept and. There needs to be an adequate amount of a given resource or a currency, or a token in this particular case or pairs of tokens more specifically. So in defy, there's often pairs of tokens that are set up with each other in a pool so that when trades occur, they can happen in a timely fashion and they can literally help the liquidity providers gain a return on those assets.

[00:02:37] As a liquidity provider, I put in a certain amount of an asset or a token, and I generally see rewards or return for doing so. And as a user who executes a swap these, these balanced pools of assets are used to literally execute the mechanics of those swaps behind the scenes and, you know, make trades go through and within a certain [00:03:00] number of milliseconds often.

[00:03:01] And if you don't have enough liquidity, then those traits can't occur in that timely fashion, and essentially, you know, a lot of these exchanges will struggle to perform within a certain amount of time.

[00:03:11] **Tim Harrison:** So, Nick, we talk a lot about collaboration and partnership and these being key to growth of the ecosystem. We'll hear from Ken, from Emergo, and also from David Siemer wave in a moment, but from an IOT perspective, what's the ultimate goal here from an IOT perspective, our goal is always to support our community and developers are number one in our committee.

[00:03:30] And demonstrate that they're number one. We are backing investment managers like wave. And so our, our partners in terms of Emergo and this way we can not only provide very clear ways of, of supporting the ecosystem, but also generate initial activity and trading volumes. And, you know, at certain key Dexis that also within lenders as well, so that people who don't have access [00:04:00] to certain types of lending can get access, which is our charter.

[00:04:03] Hi, I'm David Siemer a founder and CEO of wave financial wave is an sec registered wealth and asset management platform. We are the managers of CX. The early stage ecosystem fund designed to support a, to focus companies at the earliest stage. Now we're very excited to launch this new vehicle called the wave 80 yield fund.

[00:04:22] The purpose of this fund to support a lot of those same companies, plus other ones that are building decentralized finance applications. So obviously when those companies need support, the most is at the earliest stage when they're first launching and that's. We, our goal is to fill up the TBL of those platforms.

[00:04:38] Make sure there's a good user experience. The trade pairs are robust. There's always something to trade against. So it just w w kind of a continuation of our support from this from C fund at the earliest stage. So this fund has already a nine figure vehicle. It's going to continue to grow pretty rapidly, and we're really excited to be, to manage.

[00:04:55] Hi everybody.[00:05:00]

[00:05:31] RD support to stay IOG way. Stop stare. If I know

[00:05:40] Thank you. Singularity net is merging artificial intelligence with blockchain technology through their AGI X token. Eric sat down with CEO, Ben Gursel to talk about bringing the token to Cardona with their AGI X to ADA ERC 20 token converter launching on April the 18th. Now you can catch the [00:06:00] conversation in full on YouTube, right after this, but meanwhile, here's a clip.

[00:06:07] So today we're joined by Ben Gursel the CEO of singularity net, and one of the world's leading thinkers and artificial intelligence. So welcome to the show, Ben, and maybe you can start off by telling us a little bit about what the intersection between blockchain technology and artificial intelligence actually is blockchain and AI.

[00:06:26] Foundational technologies for, for that the next few decades, they're both key parts of, of creating a beneficial technological singularity, which is really, really what I'm after with, with all of my science and engineering and other work. And I do think AI in a way. The foundational technology. I mean, if you can make a machine smarter than people and benevolently oriented toward people, then [00:07:00] as I J good said in 1965, like the first truly intelligent machine will be the last invention that humanity needs to make.

[00:07:07] Right. So in a way, AI potentially trumps everything on, on the other hand. How do you get to that AI that, that trumps everything right? And, and one key aspect, when one thinks about the, the advent of AI in the next years and decades is who owns the AI, who controls the AI based on what set of inputs is the AI learning and evolving and developing.

[00:07:34] And this is really where blockchain comes in because using blockchain as a foundation for AI, Allows AI to be controlled in a decentralized manner without any single point of failure, without any single point of control. So where does the AGI token come into all of this for singularity net for the blockchain [00:08:00] aspect of, of course we launched singularity net running on Ethereum pretty much because.

[00:08:08] It was there. It was easier to work with Ethereum smart contracts and to build their own blockchain or to build on top of, of Bitcoin, which didn't have as mature of a smart contract framework. I was never incredibly happy with. If they're even, I mean, I love the Ethereum guys and the philosophy of a world's computer is, is kick-ass right.

[00:08:30] But that celebrity is not a very advanced programming language. If you look at the modern theory of, of programming languages and computer science and proof of proof of work in, in the form that you have in Bitcoin or Ethereum didn't ever turn me on too much, just because of the. Hastening the heat death of the universe unnecessarily and, and the heat death of the planet as well.

[00:08:57] Right. So when, when I [00:09:00] saw Cardona emerging, based on Haskell as a smart contract language, which is, which is. Fundamentally superior programming approach, just slightly what web assembly and so forth. And, and without this legacy of proof of work to overcome either, it was very appealing to move, to move the underlayer of singular unit until.

[00:09:25] Cardona. Let's talk about the the process for migrating from Ethereum to Cardona. What does that look like for you guys? We're looking at putting the bulk of our effort in singularity net on the Cardinal version version of the platform, rather than the legacy Ethereum version. So there's done a series of steps after that April 18th converted launch.

[00:09:47] So, I mean the, the next one will probably be staking of AIX, ADA tokens, just because. A fairly straightforward thing to do. And we, the [00:10:00] staking rewards, well, we haven't worked out all the details, but what will probably be more appealing than on the Ethereum version. So we'll be, we'll be pulling pulling more of a community who likes taking into the, into the, the ADA native asset community.

[00:10:15] Then the bigger step after that, we'll be putting the whole single. Marketplace onto, onto Cardona. And that's, that's more of a technical step cause we have some fairly sophisticated sort of multi-party escrow wallet system and so on. And the, in the platform, we need to get that all running in, in PLU, this then that following step after that, which is even further in the future, I've been putting a bunch of time in the last few.

[00:10:47] Into designing a new cargo side chain customized for AI, which is called, called hyper cycle. Well, thank you so much for joining us, really looking forward to literally all the things that you're coming out with soon. [00:11:00] And remember, if you want to check out that interview in full with Ben, the link is below and you can also find out more about singularity nets, latest music.

[00:11:12] So it all started with a small but passionate community. And since 2017, we've grown into a fully fledged ecosystem of millions over the past few months, that growth has turned into something quite remarkable. Now we recently hit something of a milestone with 4 million tokens surpassed and a couple of weeks ago, our research identified around 500 projects building on Cardone, but we have a confession to.

[00:11:36] We got it wrong because last week we did some further social sleuthing and a bit of deeper digging. And in fact, we revealed a whole new bunch of projects building on Cardona. We're now tracking nearly 900 projects from Dexis and defy to of course our incredible CNF. It's incredible growth and really we're only just getting started, but for newcomers, getting up to speed can be pretty daunting.

[00:11:59] There's some great [00:12:00] sites out there like Cardona queue building on CUDA, Arno built on called Dano, ADA pulse and many more, but we wanted to do our bit and add to the options with the newest central padano site and natural evolution of the existing crowdsource repo, where developers and creators building on Cod Dano can log their project from simple repo to rich directory with Cardone technical essential.

[00:12:20] And network updates. Here's Morgan Schofield, our new head of ecosystem growth to walk us through how this community centric site now in closed beta will enable seasoned cut on a pros and newcomers alike, like to learn more and to educate others on the ins and outs of our incredibly existence. Let's find out more.

[00:12:42] Hi, it's great to be part of the 360 show and the team behind a central. Central got Arnaud is a community driven living directory of resources, built to showcase the incredible ecosystem building on Caetano. We built this to be the source of truth for you, the community to rally around [00:13:00] and to get access to the resources that allow you to be the champions for the network and the future of the Catano platform.

[00:13:06] It's important to note that this is not a competitor. We really want this to be built, to feature and showcase. Projects that you're already working on. If you are a community member, building projects on the crown and network, use this as an opportunity to showcase your projects, to elevate and illustrate what your team are working on.

[00:13:26] The ask is really simple. We would love the community to come together and contribute to make this their living directory of vibrant resources. It can be think of this like a Wiki page for Caetano and most likely Wiki page. It takes the people and the community around it to build it into the valuable resource.

[00:13:46] It can be the types of formats and content that you can upload our videos, podcast, audio articles developer resources, really the sky's the limit here. We built this to be an open source directory. [00:14:00] So every time you do upload something, There's an opportunity for you to collaborate comment upvote and to peer review.

[00:14:06] What others in the community are talking about. This we'll start in beta mode. We'll be releasing the website in April for an open beta for the community to come and contribute to the URL you should look out for is the central caetano.io contributions will be visible on Twitter. And the hashtag that you should look out for is a central Catano or building on card.

[00:14:30] Now let's turn to a quick demo of the Caetano platform. This is what a central Cardona will start looking like. This is the homepage landing page. You'll be able to find any answers you're looking for about the Caetano project or the community around it, much like a Reddit or a Wiki. The most important thing is the community adding and contributing to the resource to contribute to your central kudos.

[00:14:53] Super easy. You just click on this big call to action and it's as simple as two clicks you can fill out. [00:15:00] The details of what you want to upload once you've submitted it, that will go to the community for review peer review and will be eventually published on at the central Cardone platform. Thanks.

[00:15:12] It's been really great being part of the show and feel free to add me on Twitter. My handle is empty Scofield, or just search my name, Morgan Scofield. So keep an eye out for central Cardona coming out of beta very soon. Meanwhile, you can subscribe to the new essential Cardona newsletter for ecosystem updates, news, and features right to your inbox.

[00:15:34] The link is below. Building a global financial operating system means scaling from millions to billions of users. Hydro will play an important part of that journey with the first iteration of the protocol already on Testnet and being rolled out this year. Let's hear the latest on progress from hydro engineer, Sebastian Noggle

[00:15:57] Sebastian. Welcome back to cut on a 360. Now you and the [00:16:00] team have recently reached quite an important model. That's correct. One or two weeks ago, we opened the first hydro hats on the public Kadana Testnet. So far we have been using local development networks for, for testing and really tinkering with our hydro nodes implementation.

[00:16:16] But this time we were like targeting the public Kadana Testnet, which is very important to test out the behavior on the network, which is very similar to the main net as it has the same pair of meters latency. And. So Sebastian version zero four is is an important new version. Isn't it? Yeah, just recently we cut the release zero four, which is the first version, which can talk to corral Testnet as it was the one we used for our hackathon.

[00:16:40] When we actually connected the first time to look at our Testnet, it is working. It is already usable, but it's tricky to use, right? So there is lots of things you would need to know. Try out. It's a test enough. And so there is still some things you need to know, or for example, some, sometimes you cannot close the head or something like that.[00:17:00]

[00:17:00] So this is the first version which can talk to the cadaver tests, but it will not be the last one. Right? So we are already planning and working on the next version, zero five, which we'll have noticeable improvements on, for example, handling rollbacks, which are not done right now. Of course, we need to do that.

[00:17:16] One of the main things we're working on right now and overall the next version, zero five, we'll make it a bit easier to use more robust to use even on the test net and yeah. Increase the maturity and the robustness of the whole system as we go along. So is there anything that the community can do right now?

[00:17:34] Release zero four came with a new documentation. We even have a new website, which is a couple of. And so head over to HydroDrop family, a domain name, it couldn't pass. And so we just use it for hosting documentation for our work, for the work on the hydro head protocol, noticeably instructions, how to try it out, how to do the demo, set up and use the hydro node.[00:18:00]

[00:18:00] And it will also contain as we go along more in details on the core concepts behind. It will contain information about deployment models and example use cases, maybe how to use hydro hats and of course, technical details like the API reference can also be found there and going forward. What's the next steps.

[00:18:20] Of course, we keep on working on implementing the hydro head protocol. There's more leases to come as we should see, not by now that we try to aim on a frequent and regular release cadence. People are expecting a main net release of hydro insurance. This might happen, but I want to say something about it really, that there is no Dooley's of hydro.

[00:18:41] We had a couple of versions before, and we'll have a couple of versions as we go along becoming mature enough to handle transactions on the main net. So hydro deploying hydro is not really like flipping a switch and everything will be fast and cheap. It's more that we build a foundation, a piece of technology that the builders of [00:19:00] can actually use and to use, to create fast and cheap.

[00:19:04] So as we enable our users, which is the developers of and developers on Kadana use Hydra and use hydro head, you will see some use cases become a bit quicker, but cheaper to use. And this is how we basically will roll up hydro over the next couple of months. Not another thing I would like to address is quickly that there is no need for a half work for hydro to be existing.

[00:19:25] So also means that hydro is not part of the next. It will be benefit greatly from the improvements, what we'll get from the June Hartford and maybe potentially improvements we get from the October Hartford. So hydro hats, people become more capable by doing, by having these benefits, but it's not strictly tied to it.

[00:19:44] We will see releases of Hydra, the Hydra note before, between, and after these. So indeed, that's an important point to Sebastian. Now, if any folks watching this want to get more involved in the hydro journey, what can they do? Okay. Always, I would like to encourage [00:20:00] the community and especially developers of our criminal community to try what we've taught head over to the hybrid.family website.

[00:20:08] You will see communication channels in the bottom. We would like to hear from your experience, from your successes, from your failures, even, and improve on how, what we can do and how. Basically at the things you need learn from your requirements and yeah, help basically scaling Kadana make it more capable and ideally more adopted in the future.

[00:20:33] Tara Virtua has been one of the pioneers in digital art, collectibles and virtual worlds in recent years and coming next to Cardona NFTs and the metaverse Erik caught up with Tara virtuous CEO, Joanne dash RAF to find out what's happening.

[00:20:50] NFTs and the metaverse are critical areas for to expand into. And we are fortunate that we have quite a few community projects that are working in this area [00:21:00] today. We're joined by CEO of Terra Virtua, Jawad. Osheroff to talk a little bit about Terra Virtua and how they're building the metaverse with NFTs on Cardinal Jawad.

[00:21:10] Welcome to the show. And maybe you can start off by telling us a little bit about the mission of terror. Hi, I'm Eric. Basically the mission of Tara virtual right now is coming back to where we started back in 2017. We set up a metaverse in VR with NFTs and realized back in 2018, no one understood what any of those.

[00:21:31] So essentially we doubled down on NFTs and focused on being like a premier NFT platform, respecting IPS and working with AAA brands. Ultimately our vision and our mission was to create a whole metaverse ecosystem and NFTs the digital assets, underpin all of those. So why decide to build Terra Virtua?

[00:21:51] The the metaverse the whole ecosystem. Why decide to work with Cardinal on this? You look at the technology. You, [00:22:00] you look at the vision of the people involved and you look at the community as well. So all three factors play together. So when we started, we focused very much in Ethereum, but then we were looking at having like a really solid EVM partner.

[00:22:15] Generally the team, the community, every aspect of car dollar, the screens was that this is a great place to build. And so we basically collaborated at the last conference. And since then, we've been working hand in hand with, with Cardona and actually building out new technology layers that will actually help the whole LFT ecosystem become much, much more mass, consumer friendly, you know, ultimately the team I'll just read it.

[00:22:45] Engaged in seeing and visionary and metaverse is also a part of something that called I was looking at quite heavily and has been part of the vision from day one. You know, here there's a vision with NFTs and the Mexicans. So for us, it's a good fit. Speaking [00:23:00] of the last summit we collaborated on something that involved the digital world that was created for this summit and Terra virtual was involved in this.

[00:23:07] So can you tell us about that project and where did. So basically we provide a series of NFTs. They were designed by Cardo themselves. Now, what was really interesting about this whole thing was because as we were moving our platform towards car data, we weren't there yet. So we were already at an FTE's, which are based on lithium that's one polygon.

[00:23:27] We went there, we participated in the conference and then we did the first stage was just allocate the assets to people with wallets. So that actually had them as digital assets, but they weren't true. What we were actually then going to do was mince them as NFTs and allow them to be usable and viewable in our 3d environments.

[00:23:47] We have metaverse environments we've already built and also have the available, you know, in the galleries, et cetera, et cetera. And we're what we've been doing right now for the last few months is actually making it so that. They can be [00:24:00] minted they're already in people's inventories where they can't be mean to this true NFTs.

[00:24:04] And then they can be moved in and out of Terra virtual and everything else. But there was a whole bunch of things along the way that we discovered to make our platform compatible with Cardona. But like we're at the point now where we should be able to within a few weeks have those assets minted out to users.

[00:24:21] And when we came up with one approach and then we, after talking to the team, we've actually. Making it so that people can actually self mint their assets. So with that being said what, what else can we expect in the future from Terra Virtua, basically to date Tara virtual. When we launched a year and a half ago, we launched a mobile application that did automated reality, which allowed you to view NFTs.

[00:24:43] We had an NFT marketplace and then also we had our metaverse environments. And that's the interesting thing about us. If you look at the assets that we've made, historically, we've collaborated with studios, you've got Mecca Godzilla, which is like over a [00:25:00] million polygons. You've got lost in space.

[00:25:01] You've got godfather. We created this really lovely, 3d, fully rigged assets. And that's where we're very, very different because. We were going to move towards the metaverse and in fact, what we have online now. So there's a massive Terrordome where you can walk around Godzilla and see Khan beating his chest, et cetera, and a smaller, more intimate space where you can put your artwork.

[00:25:23] These will take him out of a much, much wider environment. So right now we're going back to. Imminently within a few months, you're going to see like whole metaverse spaces, which are fully customizable with you're able to theme everything, bringing it these from the outside, be able to scale assets and items and have them run an Uber high fidelity and web GL, because this was one of the learnings we had, you know, we, we had a desktop environment, but like when you do that, when people want convenience, You lose out on, on users and you lose out other community and you're providing utility.

[00:25:59] You are. [00:26:00] So we've been building two environments simultaneously, which will live side by side, and that then follows on with the terabytes of space station. And then after that, we can go multiple worlds that can be released at the end of the year. We are actually building a universe with multiple. So, yeah.

[00:26:18] Okay. So so not only people being able to meet their own things, but creating a space station and a world and and multiple other universes, lots going on with Terra Virtua, how do they keep up with you? How do people to stay involved? A new mobile application is going to be released within two weeks.

[00:26:34] We have our Twitters and our discords and everything else, but. This is where we can see embracing the community, providing a lot of really interesting things to them, including real-time drops real-time comms, and also allowing people to do very interesting things with assets. You know, more than this here is let's look at it and hope to speculate.

[00:26:53] The future of NFTs is utility. You know, doing things with the stuff you have, right. [00:27:00] A good example right now is one of our partnerships with a company called Lightro. And you'll be able to use that NFT cause then you can get onto a virtual, which I expect to have a Cardona range, which are for chordoma community and allow them to race the cars heads ahead.

[00:27:15] And if I lose against you, you get to keep our coats and sell the parts. I'm really looking forward to seeing this. I'm sure a lot of our viewers are so make sure to check out Tara virtual. All of their information is going to be in the metadata below July. Thanks so much for joining us and carved out on 360.

[00:27:34] So keep an eye out for more from Tara virtuous soon. And as I cryptically promised at the start of the show today, there'll be more NFT fund to follow at the end of today's 360 with a special greeting from someone you might know. So stay tuned for that. Meanwhile, the core development team behind the scenes continues to build car Dano itself.

[00:27:52] Now here's John Kevin and Nigel to update us, including what's to be expected from June's vessel, heart Falk.[00:28:00]

[00:28:01] So John Kevin Nigel. Welcome again. We're going to talk about the vessel hard-fought today, but before we do Nigel, can you give us a little bit of an overview of the major release schedule and the philosophy behind that? Sure. Tim, as you may recall, we've opted to concentrate efforts around three significant releases per year, and that's in February, June and October.

[00:28:21] This enables our product teams to focus on our core improvements while we give the community plenty of lead time necessary to prepare for any significant changes and, or a hard fork. And as our community grows, this becomes more and more important because that company that's out. We'll want to take advantage of the improvements we're building and they'll need lead sign to be able to integrate that into their development cycles while we'll still release smaller improvements throughout the year, developers should look to these three milestones as the benchmarks.

[00:28:51] What we've outlined in our ways to scale could Arno this year in February, we didn't need a hard fork. Those are normally needed when we've [00:29:00] got ledger changes. However, these updates do take us on the road towards the basil hard-fought coming into. And just to recap, here's what we did in February. We delivered the CD DL compatible translation straight out of the CLI.

[00:29:15] We did the infrastructure changes necessary for incremental multisignature where you put in a leadership schedule, a mentor, transaction monitoring, and also our script cost estimates. But today what we're going to talk about as the key Vasyl components and that's our police version to our script, collateral handling and enhancements to our crypto premesis.

[00:29:36] Thanks, Nigel. And indeed, let's dive straight into Plutus and Kevin now, Kevin Plutus of course is a maturing smart contract language, still a lots of enhancements and improvements to go June of course, is going to bring some significant. Yeah, absolutely 10. So the, these are just the first of many improvements that we're going to be rolling out Plutus and for vassal in June, they're [00:30:00] going to be four key areas that we're focusing on.

[00:30:03] The first one will be referenced scripts. What these are, are on chain prerecorded. Scripts that we can then refer to from other transactions. And what that means is that we will be able to reduce the size of the transactions that use the scripts. And as I said, we'll also be able to get to. Of existing code.

[00:30:25] So a great improvement for adaptive elephants. The second thing that we're rolling out is reference inputs with reference inputs. What you can do is you can refer to an input in, from within a script without consuming it. And what that does is to allow many scripts to refer to the same input at the same time that improves our concurrency.

[00:30:47] You can do many things simultaneously using the. Inputs a great improvement to throughput from that. The third thing are inline Daytons. And what inline Dayton's [00:31:00] do is they make it easier for developers to refer to a simple. So we don't have to use hashes for inputs. For example, we can just refer to them directly.

[00:31:11] It makes it easier for users and developers to see the input. So three great improvements. These are covered by various CIPS that we've put forward to the community that have been commented on by various experts. Our CIP 33 reference screens. CRP 31 reference input CIP 32 inline Daytons. And the final thing that we're going to be rolling out our redeemers in transaction information and what this starts is to let strips cooperate by using a shared Redeemer.

[00:31:44] So for great improvements there now, John Crips, I primitives, we're not talking about some of the people we meet on crypto Twitter every day. Yeah, not this time, Tim, not, not this time. We use a lot of really cool crypto in car dyno. In fact, state of the [00:32:00] art, and maybe another time I could talk about the elliptic curve primitives we use because we use this primitive called 82 5 5 1 9 and it's state of the art in terms of digital signatures.

[00:32:09] Super cool. Today, I want to just focus on, on a change we've made around the VRF now, VRF. Cryptographic primitive. And when I say primitive, it's like little Lego bricks, little building blocks that we, that we build more complicated systems from. So the VRF stands for a verifiable, random function. And normally when you're signing something, you pass in the message you're signing in the secret key, and then you go through an algorithm and you get a signature out.

[00:32:31] Okay. That signature can be verified by people. And that's that's I think fairly well understood by most folks. The VRF is a little bit different. You put in a, a secret key. Okay. So you need a secret, you still need a private key, but you also put in a kind of a random seat. A piece of random data and during the algorithm, rather than get a signature out, you actually get a, what we call a proof and another random output.

[00:32:53] And this random output is actually indistinguishable from complete random noise. And anyway, you start to give it any [00:33:00] kind of an insight. Into how the VRF works. And it's basically something that takes the seed under secret. And producers are proof on an output, but we use this for our deterministic leadership schedule.

[00:33:10] So it's a very important aspect of how we decide who's going to mint a block next, anyway, it's expensive. So with all these kinds of cryptography, Then the math tends to be quite heavy. They're expensive for computers to basically calculate. So we were using this twice and now we've reduced that we've now managed to kind of during the block propagation process, rather than having two VRF runs to two calculations, we not only.

[00:33:33] So by doing this, we're removing redundancy. We're again, doing less work during our validation and propagation of the block. And this is all good news. Now thing is whenever you remove something like that's so technical like this, you've got to be very careful how you, how you surgically slice it out and make sure that we truly don't need it.

[00:33:49] But we've done this in a way where we're faster, quicker, better, but at the same time, just as secure, just as deterministic as we were. Thank you, John script, collateral adjustment is the [00:34:00] next thing that we're going to cover. Kevin, perhaps you can take that one. We're executing a Plutus smart contract.

[00:34:05] What we do is we have a two phase validation. And in the first phase, a script is executed our offline. We check that it's going to succeed and only if it goes through the first place, the validation do we then put it forward for execution actually on the chain. So that's the second phase of validation.

[00:34:25] Now, what we don't want is to have a scripts, excuse me. That haven't been paid for. So we require users to put up collateral to cover the cost of executing the script. And if the second phase failed, then the collateral is low. So this means that if you deliberately submit a transaction on the chain that you know is going to fail, you've always had the chance to check that through the first phase.

[00:34:53] Then you're going to pay the collateral cost for executing the script. And that way you can't attack the chain by [00:35:00] submitting a huge number of failing scripts, not having to pay for. So with the current collateral mechanism, what happens is you put up an input and ADA input, and if you, the transaction fails to execute, then all of the collateral is lost and there's a minimum value associated with that, which is great.

[00:35:21] Then the cost of actually executing the script. There's really no incentive to try to attack the chain. This way, what we've done is to make a few improvements that will help a DRP user realize that this process marks it's quite effective is perhaps a bit draconian. Doesn't quite meet all of the user needs that we're seeing from adapt developers.

[00:35:45] So what we're going to do, first of all, is we're going to just collect. So that it's the exact required amount. And then the energy is never risks, more collateral than they need to. So you can put up 1,000,008. I know you're a, you're a [00:36:00] whale, Tim, perhaps. So you put up your million Asia and in the old system, if you deliberately submitted a transaction that failed, you would have lost your million ADA.

[00:36:09] That's a bit tough. Now, if you do it, you'll be losing. Much less say that'll be some percentage of the actual script execution cost. So a few ADA instead. So that should make you much happier. You won't be risking your, your pot as collateral all the time, the rest goes into a new change dress. So you can specify where the change goes to.

[00:36:31] And of course, Kevin, that's a, that's not the only improvement. No, absolutely not. So several improvements coming from this same draft CIP the first of which is that you're no longer going to be restricted to ADA. Only tokens will allow you to use non-native tokens, aware of a lot of DAP developers.

[00:36:51] They. ADA and Nonata within the same UTX house. This can make it much easier, much simpler for that developers to use this [00:37:00] mechanism. And the second improvement is that this process is going to work much better with hardware, wallets, hardware, wallets will need. That the transaction will, will succeed.

[00:37:14] There'll be ways to check that and that will give users scriptures as much more confidence and certainty in the use of polluters strips with collateral. Cool. Thank you, Kevin. And of course, if you want to check out the sip process and some of those steps that are in flight at the moment, we'll put a link in the notes below.

[00:37:33] So John aside, these Plutus improvements, there's obviously going to be some continuing work on the network. Perhaps you want to tell us more. Absolutely Tim. So, yeah. We're going to be making large changes this summer. When we roll out a pipelining, I know there was a blog that was out there by one of our distinguished researchers, Mathias, Fitzy.

[00:37:53] I wanted to give people a little bit of insight because I think that blog was quite technical. And when people read it, maybe it's not clear exactly what we're [00:38:00] delivering. So I want to, I want to try to clear up any misconceptions out there around this. So whenever we're rolling. Stuff like this, it starts, you know, the seed starts with research.

[00:38:09] They spend all day thinking about this kind of stuff and, and coming up with different models. And it's all very academic. At that point it's not very, it's, there's no code, it's more thought and process. And then we kind of, as, as these things take shape, these enhancements, they make, whether it's pipelining or otherwise, as it takes shape, it becomes more concrete, more real, more tangible.

[00:38:29] And we think, okay, yeah, this is something we can actually make a change to, and it will have real impact for the. That process then goes to, to folks like me in the architecture section. And I will take the research input. That's my job to take that and turn it into a more tangible specification. We call it an engineering spec or architectural spec.

[00:38:44] And then indeed it goes to the guys who do the actual work, the engineers and they, they take my work and then they write the code and that's how, that's how we do it. And I think folks who maybe read Matthias's blog he speaking from a very academic standpoint. So there, when we, what we've been [00:39:00] calling pipelining on the.

[00:39:02] It's really about getting the blocks transmitted faster to your neighbor. And I've discussed that before, because the faster the blocks can transmit, the more kind of headroom we have to increase network parameters, make things faster, bigger, better. When Mathias is thinking about this, he's not thinking about, about the, the downstream impact.

[00:39:18] He's very focused on, on, on all of the different variants of pipeline and that you can have. So you might've heard words like pipelining, diffusion, pipelining, a synchronous validation, delayed validation. They're all different flavors of the same idea, which is to bring together the process of validating a block whilst you're also communicating and transmitting the data as fast as possible.

[00:39:41] Now, when we're selecting, which one of the brilliant ideas, our research geniuses come up with, we have to do so with a pragmatic hat on, because we have to say to ourselves, This this version, they synchronous validation. Maybe it's a little bit faster, but it's more dangerous and it needs more time. So we've chosen what we're calling diffusion pipelining.

[00:39:57] Okay. And that's why I call it a pipelining on the show, which [00:40:00] we feel as a suite. Which will deliver plenty of headroom for amazing changes to come for the rest of the year. So we may go back and look at other things like asynchronous validation and other things that lead to to even higher throughput.

[00:40:12] But you gotta remember we are already ahead in terms of our, our performance roadmap as is where we were. Our block utilization is still not at a hundred percent. We have a big changes coming in June. That's going to let us really ramp up the network parameters and increase block size and speed.

[00:40:29] And yeah. Then on top of that, just compounding. We may never end up doing a different variant of pipelining because actually I believe what we're going to bring in June is going to be the sweet spot and we'll be enough. And then we're going to be moving to input endorsers, which is a radically different way of doing consensus and doing block propagation.

[00:40:45] And we can talk about that in detail. Another time effectively, you have ranking blocks and input blocks, and it's, it's all quite sophisticated, but I think pipelining and the way we're bringing it in June is going to be. Headroom until input endorsers comes, which is [00:41:00] effectively an end game solution that will see us scale out for the next five years.

[00:41:04] Thank you, John, for that overview Nigel. So work continues a pace on preparing for the June facile hard-fought, but of course, October is coming down the line and it'll arrive sooner than we think that's going to be called the Chang hard fork as well. A few bits and pieces being worked on right now.

[00:41:21] What's the update. Of course, Tim, our team is starting to plan for the Chang hard fork in October and while the full scope is still in development which will change over the coming weeks and months. We definitely know certain things that are going to be in the pipeline for October and our community can look forward to seeing.

[00:41:40] And more about these in the near future. We've got changes in the area of governance. We've got more smart contracts, evolution, we've got more changes and improvements to performance. And of course that's just the core development. As we've shared previously, we've got also lots of other exciting things coming in the pipeline from light wallets to site.[00:42:00]

[00:42:00] Thank you Nigel. So I hope as you can see a huge amount of work going on for June, and we're also thinking ahead to October already, gentlemen, thank you very much for joining us and we'll see you again. See another great update from the team there. Now let's check out some of the projects building on Codonics wing writers, JPEG store are gone and Typhon wallet.

[00:42:25] This week. I got a chance to speak with some of the teams building on. We spoke with JPEG store Typhon wallet. I had gone interviewing writers. So tell us what is your mission and how is it different from other pre-existing solutions on the market? My name's Liam. I'm from a project called wing writers.

[00:42:41] We're building a decentralized exchange on Caetano. We're powered by vacuum labs, which means we come from one of the longest working development shops in the space overall longer term. Our mission is really to be a layer of the infrastructure and Caetano, you know, dApps and other platforms or [00:43:00] projects that are building on Caetano are going to require someone who can do swaps for them very securely and safely, and can integrate really deeply into their platforms.

[00:43:09] So that's who we want to be. So we're in June. We're the largest NFT marketplace on car dauno. And our mission is really to grow car Dano and bring as much users as we can into our ecosystem. We're a fun, vibrant, funky, and Ft marketplace, and we're bringing lots of exciting new features to our platform.

[00:43:30] Such as offers auctions trading profiles. We also have a launchpad for creators. We're really trying to bring more creators into the space and make it as easy as possible for them to create on Cardinal. When we launched, we were also, I think the first NFT marketplace on Kronos fully integrated with royalties.

[00:43:51] So working. Creators and supporting them has really been a big mission for us. Since the beginning I got mission is to create a decentralized [00:44:00] cloud computing marketplace enabling us to contribute, to and make use of secure, private self sovereign cloud platform. Our fall shower sharding. And sharding mechanism, distribution model based on the learning, the behavior of our resource providers enables us to store files in nos that fit their requirements.

[00:44:24] This goes in, hand-in-hand such as for GDPR compliance. If you want to be a green eco-friendly project green energy use and high-performance et cetera we had type one. All it are positioning ourselves. From a ground zero approach of, of development. The core libraries that are used by wallets for generating signing transactions.

[00:44:48] I've built from ground zero in pure JavaScript by our developers. And we are addressing the gap in the ecosystem by. Giving features to the [00:45:00] users which are not available in some of the wallets or were not available earlier when we launched diamond wallet things like attaching metadata to a transaction and allowing users to send multiple tokens in a transaction.

[00:45:12] What are the advantages of building on Cordato? Why are you in Cardona as opposed to any other. There's really two pieces. The first piece is the functional approach in programming languages on Caetano. Brian is very much makes a difference. And the second piece is the whole sort of philosophy behind Cardona to move a little bit slower and maybe consider.

[00:45:33] Problems from a little bit, a little bit more of a strategic level, make sense, right? If you look over the last 12 months, there's more and more people building on Cardona. And I think largely it's driven by those, those two reasons, the functional aspect and the kind of, long-term more considered approach to development of the space.

[00:45:50] One of the best things about the Cardona ecosystem is the community. From the beginning, we. So much support and love from the people inside [00:46:00] Cardona. And I think anyone who's trying to build something unique and interesting for our ecosystem is going to get the same type of support. The reason why we chose to build on Cardona in the first place is just because of the vision and the mission behind the blockchain.

[00:46:15] We really, really resonated with Cardona's a fully decentralized. Like the people's blockchain. We love what they're doing in Africa. Cardona is really focused on real-world applications. I think it can bring a lot more people on board with the technology and into the ecosystem. In general, we see. Being a blockchain that's truly going to take crypto.

[00:46:40] It's a mass market. Yeah. We can talk for a down a lot. I mean there could go on a long time, but I'll just list a few points there that, that stand out the most it security decentralization, which kind of go hand in hand research-driven approach you know, building up, studying the models before they actually implement the code [00:47:00] capital efficiency ecosystem and future potential, which is in Africa.

[00:47:05] People that don't have that capacity, right? We are in Chicano from 2017 and I'm, I'm a, I'm a computer science graduate. So I love technology and Cardenas technology is what brought me into the ecosystem. So We actually built CareNow scan the Explorer earlier. And then we started building type and wallets.

[00:47:30] So our low bit Carano is, is the technology, the technical foundation of Caetano. And then when the catalyst launched it provided us a great platform to find our work. And then we went fully independent and now we are working fully independent into Cardona ecosystem, and we are really happy with.

[00:47:49] So how's it going? What stage are you at now? So w we've put out our test nets, we're moving to main net in about a week to seven days. We've gone through a [00:48:00] security audit by cirrhotic, which was finished and we put a blog post out about it. About a week ago. We're doing just our final security testing with our own.

[00:48:08] I'm on squished through that. We'll move to my net and then we'll sort of make more announcements. But yeah, our plan is to get this done pretty quick. We're integrated with a bunch of different wallets, Flint, 60 volt NAMI and then a new fire as well. So we're fully launched, like we said earlier, we are the largest empty marketplace on Cardona and we've held that position for three months.

[00:48:32] But we're now at a stage where we're profitable and we're hiring grafts. So we're looking for engineers, community managers, marketers, the best talent we can get inside of the ecosystem to really. Take our marketplace to the next level and start competing with the other blockchains. I think we've basically refactored the entire code base and migrated our database, which just went live a [00:49:00] couple of days ago.

[00:49:01] So now we're gonna switch and focus on really pushing out new features a lot faster. There's a lot of core functionality. We still want to get down like auctions and offers, but there's also a lot of just new things we want to bring to the ecosystem and. Like find new ways to create features that will be interesting for you.

[00:49:19] Is it we're focusing first on setting up the marketplace the award scheme and a required infrastructure around the shared storage economy. At, at the time, at the moment we're working on porting MVP we presented to some of our partners. In CodeNow and also in the traditional space and we'll continue our testing on the UI UX we're planning audits, following the community testing and a thorough testing phase prior to public launch.

[00:49:48] We just want to we just recently released information on our ERC 20. Which integrates nomad, I'm a committer and a very easy to use front end, [00:50:00] allowing users and projects to migrate from ERC 20 to Coronado native tokens. Tycon wallet is at a development stage, which is a staple. We are enhancing the features that, that we have already developed.

[00:50:14] We are improving the UI, the user interface we have recently redesigned the full wallet from. Like pulling from scratch. It's a new interface. We introduced doc mode and now we are venturing into other platforms like mobile and tech stop. So to launch and to find staying power are two different things.

[00:50:32] Post-launch what are a few crucial milestones on the path to you guys becoming a permanent part of this ecosystem? Crypto as a general rule, tends to lean on that first part. Extracting as much attention as possible in the beginning, and then trying to execute later we're very different. We're developer led, you know, by being associated with vacuum labs who are very strong on the development side, we're really trying to build a product before we sort of progressed to any level [00:51:00] where we're trying to shill out product.

[00:51:02] Like everyone's going to be able to get on the test now. Right. That's very much aligned with our ethos. So we think people seeing the product, seeing our roadmap saying at the functionality and improvements, we're looking at over time, you know, our roadmaps really build out. We're adding more wallets.

[00:51:17] We've got more features. We've got staking in yield farming, both coming. So all of these things, I think delivering like a constant supply of new features and functionality, listening to. And then really addressing any issues and shortcomings you have. I think that tide makes you more sustainable. I can power again, our mission.

[00:51:36] Now that we're number one is to really start bringing more users to Cardona and growing the ecosystem. So. We're trying to find new artists and creators to partner up with as well as supporting the incredible existing ones that have already built collections here on Cardona. We can also grow our launchpad more.

[00:51:57] We're looking to hire a large [00:52:00] private manager there, and I think there's a lot of documentation that we can create to help people with the minting process. Just, yeah, get more resources out there to make it easier for people to create. And bring more of like, Into the ecosystem if achieving proper decentralization and a sufficient node coverage to offer secure GDPR compliance are important steps towards delivering on potential of our solution.

[00:52:28] In addition, key partnerships, such as our joint venture program with genius. And also, and our expansion as he to our NMT repetition model are important milestones that are in launch. In addition to development of our public storage social platform called after we launched the wallet we want to continue to build this wallet and continue to upgrade as, and when the Cardinal heart Cardinal upgrades, heart-focused into new and new era, we have so many hard folks planned for this year.

[00:52:58] It's going to be next year. So [00:53:00] we are not stopping here. We are driving to. Lauren and lock features into the wallet. One more thing to mention. We also launched that connector a while ago. So it's a unique approach again from the CIP. And we are also building out more and more features and documentation around that connector for different.

[00:53:21] How do you see your project niche developing on Cordato and in the wider industry over the longterm? And what problems do you feel that your project is uniquely positioned to it? Let me start with the second part first. I mean, I think the first part is if you're not building I've been in crypto about six, seven years.

[00:53:39] If you're not really building effectively with a good development team, then essentially in this industry, you're just marketing, right? Like you're leveraging someone else's product to package it together with some sort of concept. Where the other end of the spectrum, like we have we a backbone lab, very, very strong development team.

[00:53:57] That's the way, you know, we didn't come out of stealth until we're a hundred [00:54:00] percent sure that we could execute and what we're trying to execute. We tend to be probably more risk averse than other projects. You know, we speak pretty regularly about how we're structuring our product how we're approaching defy and those types of opportunities.

[00:54:13] We talk to our compliance team. We talk to our legal advisors, right? So w we're trying to obviously build a project that's sustainable. So all of our users can use us for a long time to come. We're planning to incorporate you peg store as a B corporation, where a portion of our company's profits will actually go towards environmental and social causes.

[00:54:33] And this is something we're really passionate about. We think we can build a company that is truly different and focused on our community and Cardinal and, and gives back rather than just extracting. And we hope that this will pave the way for future entrepreneurs to follow in our. We're uniquely positioned to provide a decentralization, decentralized compute services, resources, to projects, wanting to build truly [00:55:00] user solving applications and believe we can make, make a positive contribution to the development that's taking place in the third world countries.

[00:55:09] So somewhat similar to what cradle is doing, where possible through partnerships. Where we can contribute to these countries that are in need. We also think we will solve a bigger barrier in adoption and migration from traditional space to the blockchain space, by providing an easy to use clean interface.

[00:55:29] We are in the ecosystem from a long time, and we were observed observing that there's so many features that Cardinal has that were not being taken advantage of by the wallet providers. The, the users You know, big becoming so much. It's, it's like the users when see a wallet interface, they see, okay, this is what Caetano does, but Carano provides a lot more functionality.

[00:55:55] So that's where we came in the picture providing so many features that were not [00:56:00] available with existing wallets. But Gaetano as a backend technology does provide it. This was one of the main features. We, we provided a simple interface for users. The second transaction and add a message along with it.

[00:56:12] And any type of message. Any kind of complex message, not just, not just a, a text message, but like a Jason, you know, like committed data for a token, you could attach anything. And there was another unique feature of Cardona was ability to send, not just one token, but more than that, tens of hundreds of tokens, along with the transaction, that's the main goal.

[00:56:35] That's the goal that we started building type and wallet with allowing users to utilize the core Carano technology. Thank you for joining us on the show today and thank you to the audience for joining us also tune in next time for more. And of course, additional kudos to wing rise there for their recent support of the mince swap team.

[00:56:58] This community is as much a part of what [00:57:00] makes Cardona as special as the tech. Now remember defy is exciting, but we're early be careful about that. So that's nearly a wrap for March before we go. A shout out to the team at DC spark, who this week launched the middle COVID aside chain and important new step and car darnos interoperability journey.

[00:57:21] Hey guys, this is Nico core of middle Camilla for the ones that don't know that we just launched. Thanks. Looking pretty good. for Carolina that allows for to be launched on the site, which is pretty cool because you can use ADA for everything that's related to these idiom tabs. Things are looking pretty well, and I'm very excited to eventually I joined the show and tell you more about what's going on.

[00:57:49] We'll have the team on soon to tell us how it's all been going. Now, if you haven't already make sure you do the like subscribe and bell thing, lots of links below for you to check out after [00:58:00] including that interview with Ben, the IHK blog for more on car Dano and the growing X system out. Of course, if you want to subscribe to that newest central car Dano newsletter, you'll find the links below there too.

[00:58:10] So thanks for joining. And we'll see you at the next 360 show at the end of April. That's the 28th. Let's play out with this. Hey, Chimp, I've been checking out that car down on his way at three stuff was exciting to me. Yeah, they got some cool claymations too. Oh shit. That's my music.

[00:58:38] Hey stupid, Charles Hoskinson here. I'm trying to get contact with you, man. Call me sometime. Let's hook it up.[00:59:00] .